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National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: October 12, 1990

In reply refer to: R-90-42

Mr. Robert W. Grant
President
National Fire Protection Association
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On February 26, 1989, CSX Transportation, Inc., freight train No. D812-26 derailed at mile post 16.1 while traveling about 43 mph over Consolidated Rail Corporation (Conrail) main track No. 1, near the south end of Conrail's rail yard, Akron, Ohio. Twenty-one freight cars in the train derailed, including nine tank cars filled with butane. The nine tank cars came to rest adjacent to a B.F. Goodrich Chemical Company plant, and butane released from two breached tank cars immediately caught fire. About 1,750 residents were evacuated from a 1-square-mile area. On February 28, 1989, while some of the derailed tank cars were being moved from the accident site, one tank car full of butane rolled off its trucks; as a result, about 25 families were evacuated from a second area.¹

Had the derailment caused more extensive damage to the B.F. Goodrich chemical facility, located adjacent to the railroad tracks, or caused damage to the pipelines transporting chemical products at the facility buildings, the accident could have been much more severe. The storage and production of hazardous materials in close proximity to mainline railroad tracks has long been a concern of the Safety Board.

On March 25, 1981, at Enos, Indiana, a railroad flatcar that had derailed struck three of four 1,000-gallon farm truck tanks loaded with anhydrous ammonia parked near the mainline tracks. Ammonia escaped from one of the breached tanks, mixed with fog, drifted across a divided highway 1/4 mile away, obscured motorists' vision, and led to multiple motor vehicle crashes. The distance from the tanks to the track ranged from about 19 to 40 feet. The flatcar traveled 65 feet from the track before coming to rest. On November 26, 1976, in Belt, Montana, one of several derailed railroad cars struck a 16,000-gallon gasoline storage tank. In the ensuing fire, the entire bulk storage plant burned; 2 persons were killed and 24 others were

¹ National Transportation Safety Board. 1990. Derailment of a CSX Transportation freight train and fire involving butane in Akron, Ohio, February 26, 1989. Hazardous Materials Accident Report NTSB/HZM-90/02. Washington, D.C.

injured. The tank was located about 42 feet from the mainline track; several of the derailed cars traveled more than 100 feet from the track.

In a study of accidents investigated by the Board from 1976 to 1979, the Safety Board found that in 123 of 298 accidents (or about 41 percent), derailed cars traveled more than 50 feet (lateral distance) after leaving the track. In slightly more than 6 percent of the accidents, cars traveled more than 100 feet after leaving the track.

As a result of these accidents, the Safety Board issued the following Safety Recommendations I-82-1 through -4 to the Association of American Railroads (AAR), I-82-5 to the National Association of Regulatory Utility Commissioners (NARUC), I-82-6 to the National Fire Protection Association (NFPA), and I-82-7 to the American National Standards Institute, Inc. (ANSI):

I-82-1

Reevaluate existing practices and standards influencing the placement of hazardous materials storage which may be vulnerable to damage by derailed railroad cars in train accidents.

I-82-2

Based on the results of a reevaluation of existing practices and standards, develop necessary changes in recommended practices to identify and protect vulnerable hazardous materials storage near mainline railroad tracks and disseminate these recommended practices to member companies for implementation.

I-82-3

In coordination with the National Association of Regulatory Utility Commissioners, identify actions States might take to require adequate protection of future hazardous materials storage near mainline railroad tracks against damage by derailed railroad cars in train accidents.

I-82-4

Coordinate development of recommended practices for identifying and protecting hazardous materials storage near mainline railroad tracks with the National Fire Protection Association and the American National Standards Institute, to assure consistency among related recommended safety practices.

I-82-5

Reevaluate State statutes and administrative orders to identify action States might take to improve protection of hazardous materials storage near railroad right-of-way against damage by derailed railroad cars in train accidents, and develop guidelines for State actions if needed.

I-82-6

Reevaluate National Fire Protection Association No. 30 "Flammable and Combustible Liquids Code" to assure adequate protection of hazardous materials storage located near mainline railroad tracks against derailed railroad cars in train accidents.

I-82-7

Reevaluate and amend as necessary American National Standards Institute Standard K61.1-1972, "Safety Requirements for the Storage and Handling of Anhydrous Ammonia," to provide adequate protection of hazardous materials containers located near mainline railroad tracks against derailed railroad cars in train accidents.

In regard to these safety recommendations, the Safety Board notes the efforts of the interindustry task force, established by the Chemical Manufacturers Association (CMA) and the AAR to address the safe transportation of hazardous materials by rail, and Circular OT-55 subsequently issued by the AAR to its members on this subject. The Safety Board has reviewed the circular and believes that it provides valuable guidance on separation distances of hazardous materials from mainline railroad tracks. The Safety Board believes, however, that the AAR should clarify and emphasize in its circular that hazardous materials storage and production facilities (including newly constructed and reconstructed facilities, tank cars, cargo tanks, and portable tanks) should be located no closer than 100 feet from mainline railroad tracks. The AAR in its recent letter of July 25, 1990, addressing Safety Recommendations I-82-1 through -4, and again referencing the work done by the interindustry task force, indicated that it intends to work with the NARUC, the NFPA, and the ANSI to encourage these organizations to adopt recommendations on storage distances contained in Circular OT-55. The Safety Board is aware that the CMA has issued a notice to its members urging them to adopt recommendations on storage distances contained in the AAR's circular.

The NFPA responded to Safety Recommendation I-82-6 on November 15, 1982, stating that modification of the existing guidelines was not necessary. The recommendation was, consequently, classified as "Closed--Unacceptable Action" on February 28, 1983. In view of a 1989 study of over 800 accidents conducted by AAR on lateral distances traveled by rail cars after leaving the track and in view of AAR's recent statement that it will work with the NFPA to adopt the recommendations on storage distances, the Safety Board encourages the NFPA to revise, as necessary, all codes that address protection of hazardous materials storage and production facilities located near mainline railroad tracks in accordance with the AAR's study and Circular OT-55.

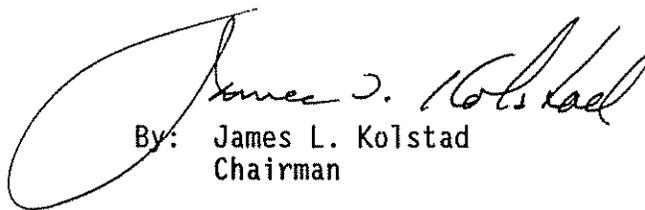
Therefore, the National Transportation Safety Board recommends that the National Fire Protection Association:

Revise, as necessary, the Association's codes that address protection of hazardous materials storage and production facilities located near mainline railroad tracks, in accordance with the Association of American Railroads' (AAR) 1989 study on lateral distances traveled by derailed rail cars and AAR's Circular No. OT-55, "Recommended Railroad Operating Practices for Transportation of Hazardous Materials." (Class II, Priority Action) (R-90-42)

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation R-90-42 in your reply.

Also as a result of its investigation of this accident, the Safety Board issued safety recommendations to the CSX Transportation, Inc., the City of Akron, the Association of American Railroads, the Federal Railroad Administration, the International Association of Fire Chiefs, the National League of Cities, the National Association of Counties, the American National Standards Institute, Inc., and the National Association of Regulatory Utility Commissioners.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, BURNETT, and HART, Members, concurred in this recommendation.


By: James L. Kolstad
Chairman